

**Rombough, Kyrik**

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**From:** Smith, Kim  
**Sent:** Wednesday, November 12, 2008 8:14 AM  
**To:** Gustafson, Brian; Rombough, Kyrik  
**Cc:** Duvall, Ron  
**Subject:** FW: Attn: Hyperion Air Permit

Brian/Kyrik,

Hyperion comment. I replied and told him we received it.

Kim

-----Original Message-----

**From:** Spader, Dean J [mailto:Dean.Spader@usd.edu]  
**Sent:** Tuesday, November 11, 2008 11:32 AM  
**To:** DENR INTERNET INFORMATION  
**Subject:** Attn: Hyperion Air Permit

Dear Sirs/Madams:

I have attached my Comments for the air permit hearing. Please confirm by email REPLY that you have received this letter. Sincerely, Dean Spader, Attorney at Law

11/14/2008

Administrator of Air Quality Program  
DENR  
Joe Foss Building, 523 E. Capitol  
Pierre, SD 57501

**Attn: Hyperion Air Permit**

I am an attorney and citizen of Clay County who lives on the East side of Vermillion closer to the proposed refinery than 95% of the Union County voters who approved the rezoning. I also have over 350 family members (five generations), most of whom live in South Dakota and many of whom farm in SD. Therefore, I am enclosing in this public comment key facts that exist in the research, and critical questions that I wish to receive answers to prior to DENR granting any air permit to Hyperion.

**Question 1:** Since numerous studies listed in **Facts** below indicate that self-reporting of a) toxic, b) illegal, and c) green house gas emissions by refineries grossly under-report the actual emissions (in some cases the actual emissions exceeded the reported emissions by 100 percent), will DENR require only self-reporting, or will DENR demand regular monitoring by independent monitors, as Texas has done?

**Facts:** In the groundbreaking Texas Air Quality Study 2000, researchers from the University of Texas, National Oceanic and Atmospheric Administration, and others then measured volatile organic compounds (or VOC's) at levels three times to 100 times the emission volumes reported by refineries.

Alex Cuclis, working at the University of Houston in 2002, found numerous European studies had produced similar findings. He joined the Houston Advanced Research Center (HARC) in 2004 and can be contacted there.

In 2006, the Texas Air Quality Study II, found levels of VOC's 10 times to 40 times greater than emission estimates by the refineries. This study used 2D monitoring with infrared cameras that was a far-reaching follow-up to the 2000.

Another 2D technique is DIAL (short for Differential Absorption LIDAR). It was assessed in a study overseen by HARC through its management of the Texas Environmental Research Consortium. Spectrasyne, a British company, has used DIAL extensively in Europe and Canada, finding emissions up to 40 times greater than reported volumes.

**Question 2:** Since Hyperion promised to build the cleanest refinery in the world, will DENR research and require the latest and best monitoring devices (DIAL, SOF, TCT, IRC, all defined in the **Facts below**) in the oil refining industry throughout the world?

**Facts:**

DIAL (Differential Absorption Light Detection and Ranging) is a laser-based method of directly measuring fugitive emissions (leaks) from any oil and industrial sector. The technology has been effectively used to quantify fugitive emissions from storage tanks and process facilities.

SOF is the Solar Occultation Flux method that uses spectroscopic analysis of the solar light to measure the number of VOC molecules above the SOF vehicle. The measurements are conducted while driving and hence it is possible to

measure the total mass of VOC molecules along the roads traveled. The total mass is multiplied by the wind which yields the VOC's in kilograms.

TCT is Time Correlation Tracer method that uses tracer gas on the upwind side of the refinery that mixes with the VOC's (Volatile Organic Compounds) to allow the Infrared (IR) video cameras to measure the leaks in the downwind plumes. "SOF and TCT are two complimentary mobile FTIR methods which are used to quantify VOC leaks.

- SOF provides an instant overview of which leaks are "big and small" in an industry. It is used to quantify VOC emissions from full facilities down to the level of a few tanks, but works only in the day.
- TCT is used for more detailed studies of emissions, such as tank emissions over tank filling cycles, ship loading and repair. It works at night.

IRC is an Infrared Imaging Camera technology (also referred to as the HAWK camera). These definitions are taken from HARC studies.

**Question 2a:** Will DENR officials contact Alex Cuclis at the Houston Advanced Research Center (HARC) to obtain the latest research and trends involved in the most accurate, efficient, and long-term monitoring of air pollutants emitted by refineries, and make these latest monitoring devices a condition of any permit granted to Hyperion?

**Facts:** It is clear that the present monitoring devices and methods used by the self-reporting oil refineries are grossly inaccurate estimates of projected emissions (based on measurements of less than five percent of a refinery) rather than same-time, accurate measurements of actual, existing emissions. DENR must require the latest and best monitoring devices and methods; if you don't, citizens will be subjected to levels of pollutants far exceeding the legal limits that are already dangerous to our health.

**Question 3:** Since these studies by independent Texas agencies using the latest monitoring technology (that the EPA continues to ignore due to overdue influence by the American Petroleum Institute, API) indicate that up to 90% of refinery emissions may not be measured, how will DENR insure that these fugitive and under-reported emissions will not dangerously pollute the air, water, and cropland in SE South Dakota?

**Facts:** Studies using DIAL in the past 20 years, and the HAWK camera over the past few years, suggest that up to 90% of emissions from petrochemical facilities may not be measured by API and EPA's Method 21 procedure.

**Question 4:** Since Hyperion promised that it would use the best available control technology (BACT), and there are several levels of BACT--- with LAER (lowest achievable emission rate) being truly the "most stringent"--- why are you granting Hyperion a PSD (prevention of significant deterioration) permit, which is not as stringent as LAER?

**Facts:** LAER is clearly the most stringent standard, and Hyperion's public promises (as well as Governor Round's public promises) to be the cleanest, most "green" refinery in the world, require the LAER standard. I understand that South Dakota's clean air makes us an attainment state, and the EPA requires only PSD not LAER. However, allowing Hyperion to renege on its public promises in order to save money by using PSD will emit more air pollution than if they were required to use LAER. If DENR grants a PSD permit, DENR does not carry out the best emission control for South Dakotans.

**Question 6:** Since the primary function of DENR is to preserve our natural resources, and cropland is our prime natural resource in the Midwestern breadbasket, how can DENR permit the destruction of 10,000 acres of cropland---our most valuable natural resource?

**Facts:** Only one-tenth of the earth's surface is cropland, and in the last 50 years, cropland has been cut in half from one half an acre to one fourth an acre per person in this world. More importantly, each acre can sustain 7 persons on a plant-based diet. Already, over one billion people suffer from hunger and malnutrition in this world due to lack of sufficient food. By permitting this refinery, and allowing destruction of 10,000 acres of cropland, DENR will condemn 70,000 more human beings to hunger and starvation. DENR's enabling act gives DENR the power to preserve natural resources and there is no greater natural resource than the rich, nutritious soil on which Hyperion wrongly chooses to build its refinery.

**Question 7:** Since President Bush and national policy recommends that all new refineries and refinery expansions be on existing brownfields and abandoned military bases, how does DENR justify using greenfield natural resources to permit a refinery?

**Facts:** South Dakota is the only state considering a refinery in a greenfield on prime cropland. This form of reckless destruction of prime cropland---especially when viable alternatives exist--- is factually a sign of a society's accelerated decline toward depletion of its essential natural resources merely to feed its over-reliance on fossil fuels to propel its short-term greed.

**Question 8:** Has DENR considered that a permit to Hyperion will make South Dakota a partner in the "biggest environmental crime in history" and the "most destructive project on earth" (the mining of tar sands in Canada)?

**Facts:** See terrifying pictures of the vast destruction, and read report at Environmental Defence. The reports says mining sour crude in Alberta is "the most destructive project on earth." Mining sour crude destroys pristine boreal forest (25,000 square miles at risk), produces massive amounts of greenhouse gasses (3-5 times more than drilling), requires 20% more energy than drilling, releases carcinogens into streams and water sources, creates shortage of water, results in vast toxic tailings lakes (11 square miles in size), and depletes natural gas resources for extraction. An area of the size of Florida will be destroyed in the pristine boreal forests if tar sands mining continues, and South Dakota's share of this destruction will be sizable.

**Question 9:** Why has DENR not required an Environmental Impact Statement?

**Facts:** Several factual realities require an EIS for this project:

- a) This will be the sixth largest refinery in the country, the first to be built in 30 years, and the first in eastern South Dakota---the location of our richest soil and most important food basket.
- b) This is the only refinery being constructed in a Greenfield.
- c) This refinery will refine the dirtiest, most sulfur-high oil from the tar sands.

- d) This refinery will more than double the entire carbon dioxide emission in South Dakota. In addition, the extraction of tar sands oil in Canada emits massive amounts of CO<sub>2</sub>. The piping of 400,000 barrels a day for the next 50 years will burn fossil fuels and release massive amounts also.
- e) The most notable and reliable scientists just released their latest study (November, 2008) stating that the 385ppm of carbon dioxide in the air is already causing massive environmental destruction, and the world environment cannot sustain a 450ppm level previously predicted to exist in ten years.
- f) High carbon dioxide levels will impact South Dakota crops, food chain, and environment---therefore, the common excuse that Co<sub>2</sub> levels are only a national issue is not factually accurate.
- g) Numerous other factual realities that only an EIS could develop, including the environmental impacts of several emissions beyond the criteria pollutants covered by this air permits.

**Opinion:** The failure of DENR to require an EIS is a fatal flaw. (And reflects DENR's rush to enact the political will of a few rather than the legal mandates enacted for all in the law.)

I request that you answer all the questions fully and competently. With deep concern and growing pessimism for the future of South Dakotans and my family,

Dean Spader, Attorney at Law, long-time and SD resident  
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Vermillion, SD 57069